# The Significance of the Double Slit Experiment

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The double slit experiment is one of the most important aspects of knowledge. Not only in physics, but also in the philosophy of science itself. Basically it illustrates that the intention of the scientist, the observer in the process of scientific experimentation plays a major role in the process of scientific experimentation. In a classical rational approach to science, all experimentation is considered as objective. This view promoted as Newtonian rationalism views the cosmos as a cold mechanistic place, a place to be manipulated according to well defined laws and processes. The origins of quantum physics however refute that point of view, and give rise to a completely different view, a completely different perspective. A perspective which as a result of the double slit experiment includes the intention of the experimenter as part of the overall model.

Basically the double slit experiment may be explained as follows. We start with smoked glass through which a fundamental particle, alpha particles, are pushed. The glass in bombarded with a stream of these particles. The particles impinge on a screen behind the smoked glass, and it is the pattern produced by the impingation that is significant. In the case that there is one slit, the pattern represents what is called a normal, or gaussian curve. The bell shaped curve results from the fact that due to the slit, certain particles are diffracted from the sides of the slit, whilst the majority pass through without change. Thus the pattern is denser in the middle and tails out at the ends.

In the case of the double slit, we get an interference pattern, a series of highs and lows, similar to a sine wave. This interference may be construed to mean that the particles are supporting each other in one place, and destroying each other in other places. This is the same as the interference pattern produced by water waves. So far there seems to be nothing different from the viewpoint of classical physics. This changes however when we slow down the rate of emissions of the source. Experiments have been conducted where the emission rate was such that only one particle could possible travel through the slit at a time. In the case of a single slit, the pattern of the normal curve was again repeated. However in the case of the double slit, something strange was observed. The interference pattern was repeated, just as in the case where a continuous stream of particles was emitted. Note however the precept that the emitter has been slowed down so that only one particle at a time could be interacting with the double slit.

So what are the implications of this. The only feasible conclusion is that the particle travels through both slits at the same time. It is the only way to generate the required interference pattern. So what does this mean for physics. What it means is that the particles are spread out in space, that they are quantum fields. The word quantum here is significant, as they are assumed to be discrete packages of energy and mass. Eventually when we consider the full implications of the double slit experiment we find that the intention of the experimented affects the outcome of the experiment. This is quiet well known in statistics, particularly in market research, but it's implications in physics are quiet astounding. It suggests that our intentions may alter the behaviour of nature, the laws of nature at a very deep level. Intention is a quality of the mind, and the only thing that can alter the mind is a mental process. Thereby suggesting that our minds influence the mind of nature, our intelligence

influences the creative intelligence of the cosmos. We are at one with the universe, we are a part of the cosmic mind.